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The State of the Art and the State of the Practice

Battle of the Bulge: The Impact of Information Age Command and
Control on Conflict

Lessons Learned

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Abstract

The Battle of the Bulge, Hitler's desperate gamble to split the Allied forces attacking Germany from the west during the winter of 1945, is a classic in military history. It is written from the perspective of the Allied operational level of command. The decisions made at the operational level (theater and army) on the Allied side illustrate both (a) very effective Industrial Age decisionmaking and (b) situations where the adoption of network-centric and Edge decisionmaking (or perhaps better stated, sensemaking) would have made major differences. Understanding the Germans' decisionmaking is also important in order to understand what happened because it was largely a reflection of one individual's idiosyncrasies as multiplied by a rigid, centralized, and hierarchical approach to command and control. To conclude, if greater information sharing had occurred, the German offensive might have been understood. This would have also caused the Allies to make a number of different decisions, such as greater emphasis on gathering intelligence in certain areas, and allowed for information to be distributed in a different method.

Introduction

This study was conducted in order to illustrate the impact of alternate C2 approaches. It will begin by providing a context and reviewing the events that occurred, examine the problems in the command and control arena, and finally explore how Information Age command and control would have made a difference. This study also provides a variety of perspectives from leader to tactical missions (conflict to peacekeeping, and humanitarian) and alternate C2 approaches.

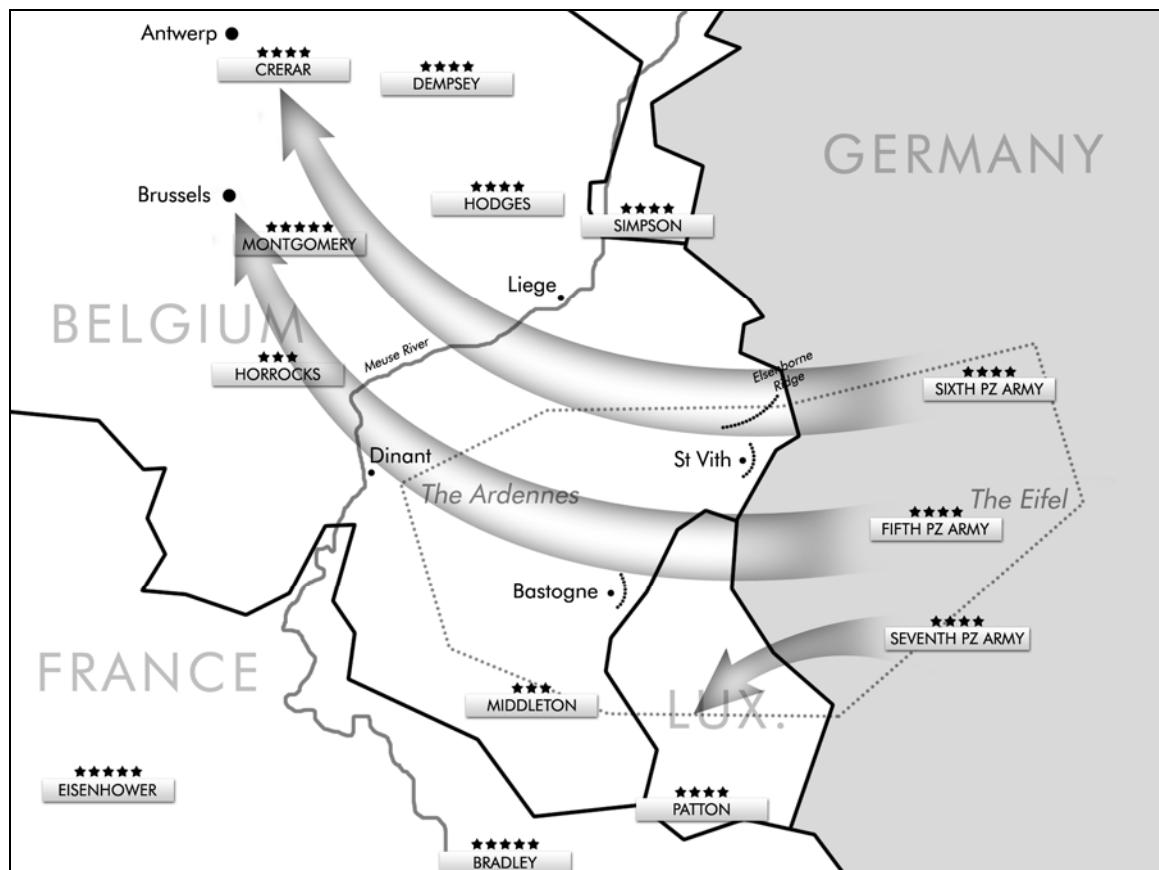
Battle of the Bulge

The Battle of the Bulge, Hitler's desperate gamble to split the Allied forces attacking Germany from the west during the winter of 1945, is a classic in military history. It is reviewed here primarily from the perspective of the Allied operational level of command. Like most conflicts, it was decided at the tactical level, largely by the determination and will displayed by American forces under enormous pressure, and at the strategic level by the capabilities created and fielded by the countries involved. The decisions made at the operational level (theater and army) on the Allied side illustrate both (a) very effective Industrial Age decisionmaking and (b) situations where the adoption of network-centric and Edge decisionmaking (or perhaps better stated, sensemaking) would have made major differences. Understanding the Germans' decisionmaking is also important in order to understand what happened, but it is not analytically significant because it was dominated by Hitler, who developed (with the aid of a very small number of staff officers) the entire plan and insisted that it be followed in detail until well after they had lost any possibility of success. Hence, it was largely a reflection of one individual's idiosyncrasies as multiplied by a rigid, centralized, and hierarchical approach to command and control. Senior German generals went along with the plan, despite serious initial misgivings and clear indications that it should have been modified shortly after the attack was initiated, because of either personal fear (this occurred shortly after an effort to assassinate Hitler led to dramatic reprisals against many German officers), blind loyalty or some combination of both.

What Happened?

After the Germans' failure to defeat the Normandy landings and the breakout by the Allied forces on the Western Front, the Allies pressed the German forces back to the "West Wall" defenses of German soil. In the east, the Russians had stemmed Germany's advance and were putting heavy pressure on their forces. Hitler concluded that his only hope to avoid the "unconditional surrender" terms of the Allies was to launch a counter-attack in the west that would (a) split the forces pressing Germany and allow destruction of a major part of those forces, (b) penetrate to seize the key port of Antwerp in order to prevent the Allies from using it to shorten their supply lines, and (c) cause dissention between the U.S. and U.K.

Hitler first articulated this idea to his staff on August 19, telling them to prepare for a major counter-offensive in the west during November in order to take advantage of the onset of winter (which would bring snow, morning fog, and other weather that would inhibit Allied air).¹ During September, Colonel-General Jold, the Chief of the Operations Staff (OKW), was tasked to produce an outline plan.² When the Ardennes was mentioned as a possible location for the attack, Hitler immediately latched onto the idea.³ On September 16, Hitler announced the broad plan. As illustrated in Map 1, the military objectives of the operation were to cut off and destroy the British First and Canadian Second Armies in the north and capture the port of Antwerp. Hitler also anticipated gaining important sites from which to launch V-2 terror bombs and opening rifts between the Allies, both contributing to the opportunity to negotiate reasonable (from his perspective) peace terms.



Map 1. Hitler's plan.

Between the middle of September and the middle of December, the Germans created a substantial force and moved it into the Eifel, a heavily forested area roughly opposite the Ardennes. This involved creating an entire new Panzer Army (Sixth); moving, offloading

¹ Elstob. *Hitler's Last Offensive*, 4.

² Keegan. *The Second World War*, 440.

³ Delaforce. *The Battle of the Bulge*, 30.

and concealing hundreds of trainloads of men and material; and organizing tens of thousands of men as replacements in both reconstituted and new military organizations. Many of those involved in these activities were unaware of their purpose. Keegan argues that the Allies failed to detect the preparations for the Ardennes offensive because (a) they were focused on their own plans for a major offensive and (b) they knew that the Ardennes was extremely difficult terrain, particularly during the winter.⁴ This, of course, ignored the fact that the Germans had twice (early in both World Wars I and II) successfully used the Ardennes as an invasion route. Elstob points out that when General von Rundstadt took command of German forces in the west, his reputation as a classic commander convinced the Allies that he would use conventional approaches. Therefore, the Allies interpreted those parts of the German build-up that they detected as preparations for either spoiling attacks or counter-attacks against Allied offensives.⁵

The Germans planned to attack directly through the Ardennes with three armies: the Fifth Panzer Army under General Dietrich in the north, the newly created Sixth Panzer Army under General Manteuffel in the center, and General Bandenberger's Seventh Army, largely composed of infantry, in the south. The Seventh Army's primary mission was to create a strong "shoulder" in the south, thus blocking Patton's highly mobile Third U.S. Army from mounting an attack into that German flank.

The two panzer armies were expected to attack more directly west, largely against General Middleton's VIII Corps, which was composed of three infantry divisions, one armor division, and a cavalry group made up of two squadrons. The armor (9th Armored Division) had not seen combat, two of the infantry divisions (the 4th and 28th) were being rested and reinforced after major combat action, and the third (106th) was made up of green troops newly introduced in the theater. A major part of the combat power from the German Sixth Panzer Army was to be directed against another green division (U.S. 99th Infantry) that belonged to the U.S. V Corps, holding the line just north of the 106th. When they broke through, the two German armor armies planned to turn northwest, cutting off General Montgomery's First British Army and the Second Canadian Army from American forces farther south and seizing the key port of Antwerp in their rear.

⁴ Keegan, 442.

⁵ Elstob, 46-47.

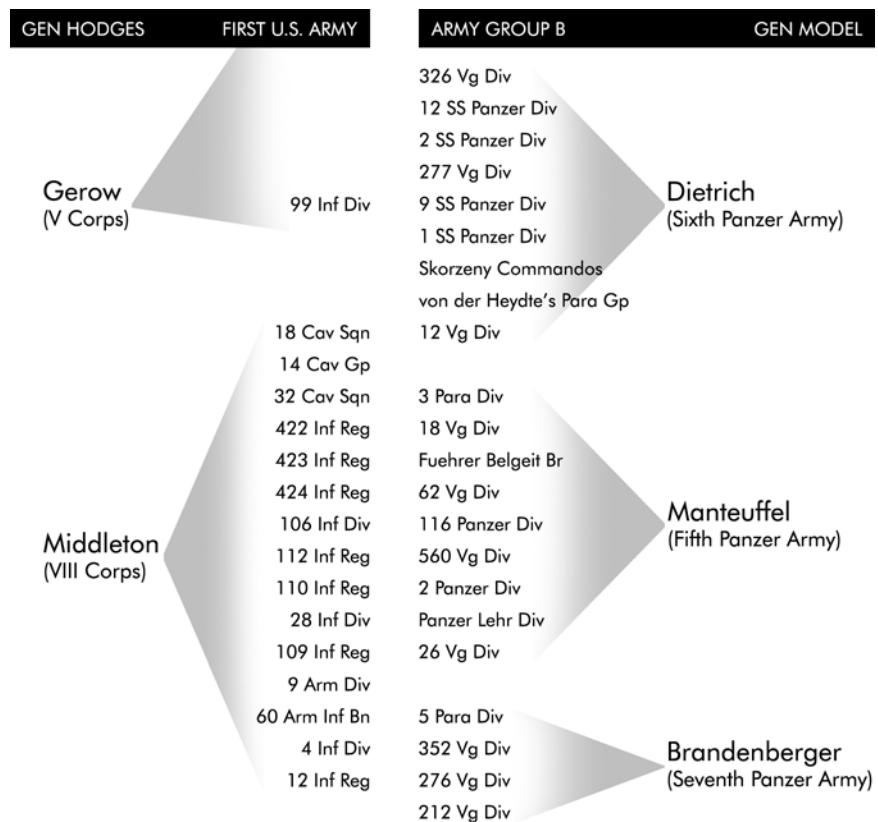


Figure 1. Initial deployment of Allied and Axis forces in the Ardennes (listed from north to south).

A few key people on the Allied side did perceive the threat. General Patton, on advice from his G-2 (intelligence officer), concluded that the Germans had created a significant force and planned a “strong spoiling attack” through the Ardennes to relieve the pressure he and General Montgomery were bringing on their defensive lines north and south of those forests.⁶ The G-2 of the First U.S. Army actually briefed General Hodges and his staff on December 14 that he feared an attack through the Ardennes, but “nobody paid much attention to his outburst.”⁷ However, “none of the Allied commanders [who met at Maastricht on December 7, including Eisenhower, Bradley, Montgomery, and Patton] believed that the Germans would attempt any *large scale* counter-offensive.”⁸ Indeed, on December 15, the day before the German offensive began, Montgomery crafted a communiqué saying that “the enemy is fighting a defensive campaign on all fronts. His situation is such that he cannot stage major offensive operations.”⁹

⁶ Zaloga. *Battle of the Bulge 1944.*, 14.

⁷ Delaforce, 74.

⁸ Delaforce, 12.

⁹ Elstob, 46.

On the morning of December 16, when the attack was launched, the German forces included more than 240,000 troops, roughly 700 tanks, and about 2,000 guns of all types and calibers. The Americans in the sector numbered about 83,000 troops, 242 tanks, 182 self-propelled guns, and 394 artillery pieces.¹⁰ Thick fog and heavy snowfalls grounded the Allied air forces. This, along with total tactical surprise across the front, gave the initiative to the Germans. They also planned to insert paratroops behind Allied lines and seize bridges over the Meuse River, but a combination of logistics errors (there was no fuel for the trucks supposed to move the paratroops to the airfields) and the weather caused a full day's delay in that part of the operation.

Each of the attacking armies had a small group of English-speaking German troops, largely dressed as Americans and using captured American vehicles, near its leading forces. While many of them were captured because they were unable to answer the standard trick questions of Americans at roadblocks (e.g., Who won the World Series last year? What is the name of the baseball team in Cincinnati?), some of them penetrated quite deeply, both cutting communications lines and attacking isolated positions. Rumors of their presence proved to be a significant confusion factor. Also, the initial German artillery barrages cut the telephone wires linking many of the Allies' forward positions to their headquarters, increasing the difficulty of understanding the purpose and goals of the attack as well as the problem of organizing coherent defenses once the initial defensive lines were breached.

The heaviest attack was made by the Sixth Panzer Army in the north, which also had the shortest routes to the deep objectives. Their infantry was expected to open the American lines so that the armor could pass through and penetrate rapidly. However, green American troops (U.S. 99th Infantry) put up a surprisingly strong resistance. They were bolstered by a brigade of the veteran 2nd Infantry that was located just behind them on a flank as the reserve for a major Allied attack that was launched only two days earlier. In addition, one brigade of the (also veteran) 1st Infantry Division, which anchored the position in the north on a natural defensive position, the Elsenborne Ridge, arrived to steady the line. The defense built around these forces was so stubborn that the German armor divisions could barely get across their starting lines. In fact, the northern shoulder of the "Bulge" was steadily reinforced and never did give way, despite heavy pressure and terrible losses.¹¹ As a consequence, little of the combat power of the Sixth Panzer Army was able to get into the fight during the first few crucial days.

The situation in the south, where the German Seventh Army was seeking to roll back American forces and create a defensible shoulder, was not much better. Here the Germans relied on infantry and were also unable to provide enough artillery. Again, the thinly stretched American forces (largely 4th Infantry supported by Combat Command A from the 9th Armor) showed unexpected capability and resolve. The Americans were also aided by plentiful artillery. As a consequence, the fighting was fierce, but the Germans

¹⁰ Elstob, 44.

¹¹ Elstob, 67.

were stopped well short of their objectives. This meant that the Bulge was more vulnerable to an attack from the south than the German plan had envisioned.

The greatest German success came in the center of the attack where the Fifth Panzer Army was able to push its heavy infantry forward and virtually destroy one American infantry division (106th). However, because of the weather and the weight of the key armor, this attack was largely confined to the roads. German success depended on capturing key road junctions. Two of these, St. Vith and Bastogne, proved very difficult to take. While both were on the list of German objectives for December 16, the first day of the offensive, neither could be approached on that date. Along with the persistent counter-attacks by the Americans and the defenses aided by the terrain of the Ardennes, the German force in the center also fell far short of its objectives for the first day.

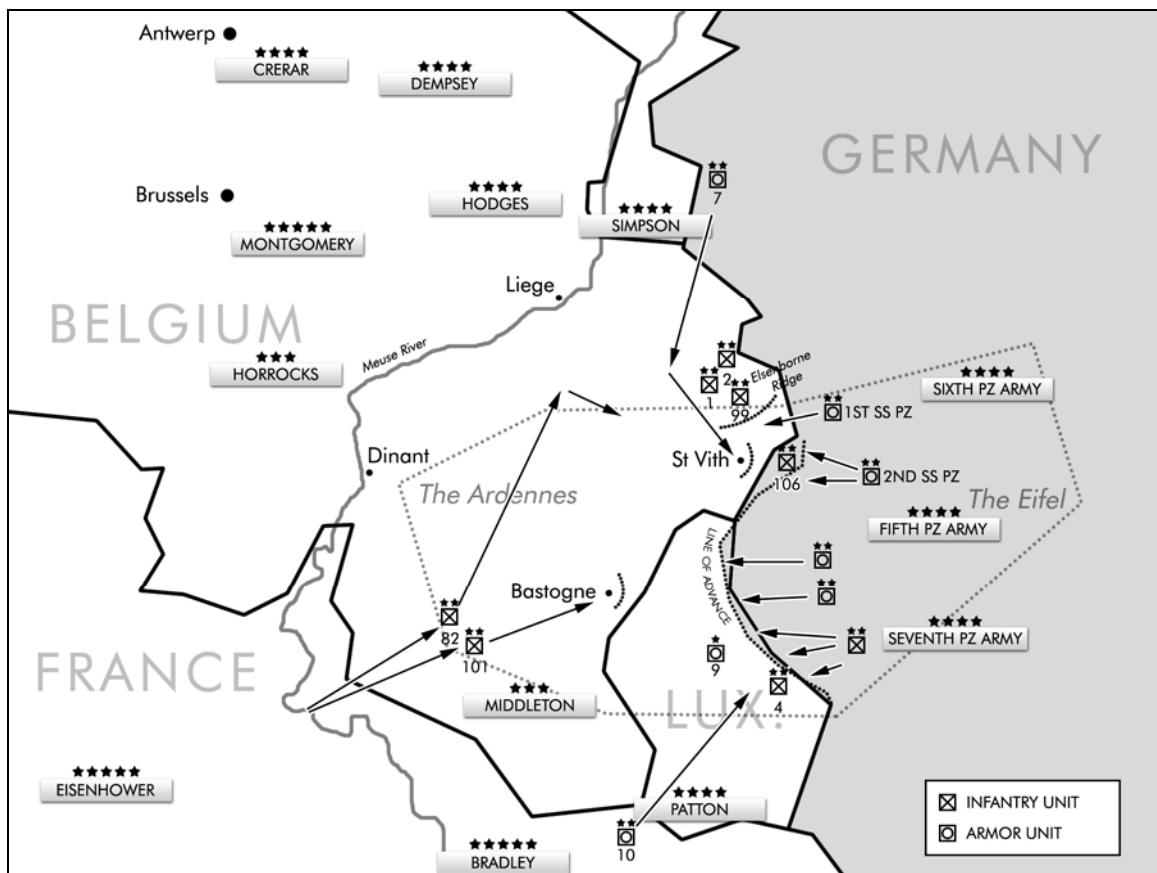
By coincidence, General Bradley, whose 12th Army Group included Middleton's VIII Corps, was visiting Eisenhower's headquarters on the 16th when the German attack was launched. Despite his belief that this was a spoiling attack, Bradley accepted Eisenhower's decision to order two armor divisions into the area. The 7th Armor came from the north (General Simpson's 9th Army) and the 10th Armor from the south (General Patton's 3rd Army). These proved to be vital movements as elements of these divisions (organized into Combat Commands) provide essential weight (especially tanks) in the line of battle at a number of points over the next few days. These commitments added 500 tanks to the Allied total, more than erasing the initial German advantage in armor within the engaged sector.¹² Combat Commands from 9th Armor were immediately ordered to the key road junctions at St. Vith and Bastogne.¹³

The next day, the situation remained very confused, however reports indicated that it was still deteriorating, SHAEF (Eisenhower's headquarters) committed all of its reserve forces, the 82nd and 101st Airborne Divisions. The 101st was ordered to Bastogne. The 82nd was sent to join the forces seeking to block the fast moving spearhead of the 1st SS Panzer Corps, part of the Fifth Panzer Army. That German force reached St. Vith on the 17th, but could not break through the defenses there, which meant that it could not reach Allied fuel dumps or break out into open country.¹⁴ The defenses at St. Vith held until December 23, when they were withdrawn under pressure. This strong defense was crucial in delaying and diverting German armored columns (See Map 2).

¹² Elstob, 209-210.

¹³ Elstob, 138-139.

¹⁴ Keegan, 444-445.



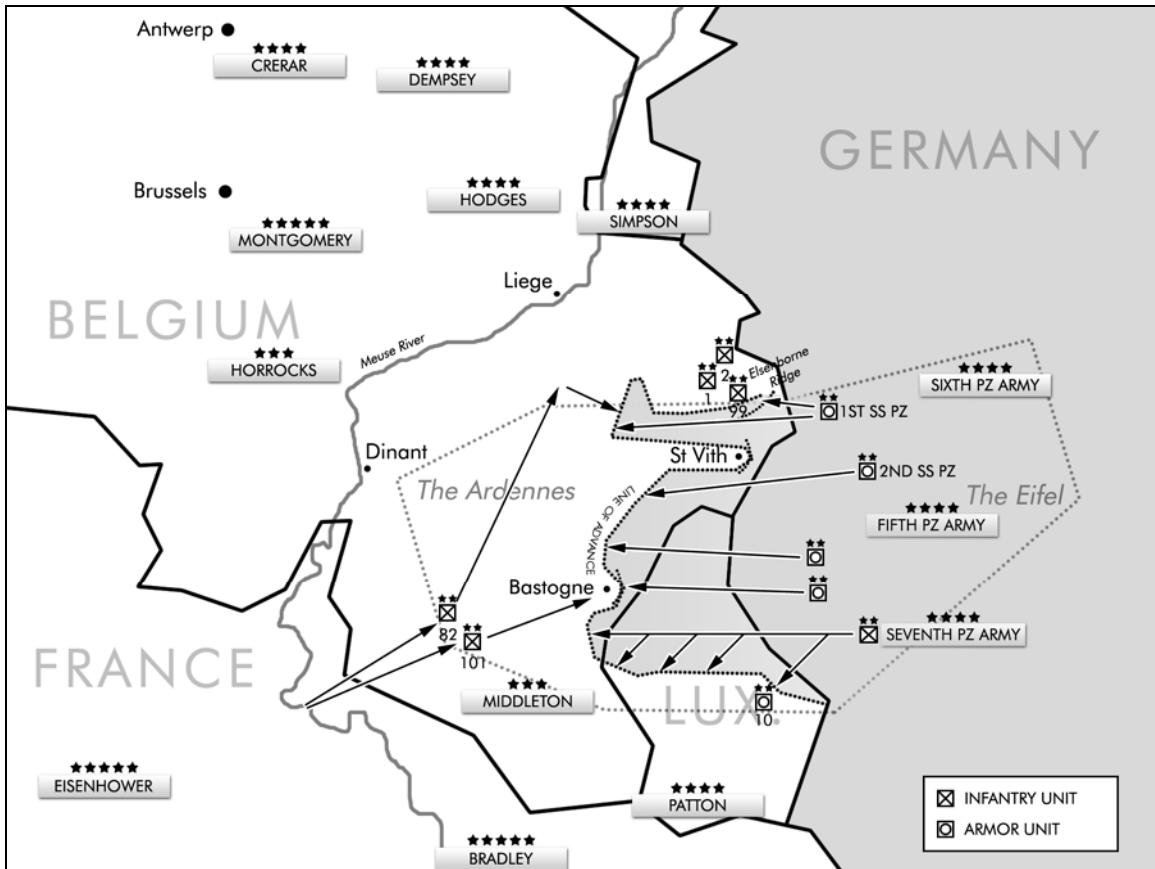
Map 2. The German advance on December 16, which failed to reach any of its objectives, including Bastogne and St. Vith.

American forces, remnants from units beaten or broken in more forward positions, continued to arrive at Bastogne where they were stiffened by elements from 9th Armor. By midnight on the 18th, the first troops from the 101st Airborne Division reached Bastogne. Despite heavy losses and often desperate efforts, the Germans could not take that town, which forced their attacking elements to spend time and fuel in order to continue their advance. The town was ultimately relieved on December 26 by elements from Patton's Third Army, though bitter fighting continued in the area for several days thereafter.¹⁵

Allied air also played a crucial role. While the flying weather was terrible for the first few days of the German offensive, it broke on the 23rd and 24th, which allowed important resupply flights to the troops surrounded in Bastogne as well as conducting damaging attacks on the German forces that exposed themselves during daylight. Allied air also disrupted German resupply efforts.¹⁶

¹⁵ Delaforce, 243 and Elstob, 347.

¹⁶ Elstob, 321.



Map 3. The German advance on December 20, which encountered heavy resistance at Bastogne and St. Vith.

During the period between December 16, when the attack was launched, and January 8, when Hitler recognized the failure of his offensive (and ordered his most advanced Panzer divisions to fall back¹⁷ and instructed his logistics system to divert all new Panzer tanks to the Eastern Front to meet the increasing threat from Russia¹⁸), each of the most senior Allied commanders demonstrated his personal philosophy and approach to warfare.

For his part, Patton demonstrated his ability to think and plan both thoroughly and aggressively as well as his desire for immediate and decisive action. He was also able to show both the value of the thorough training and preparation of his forces and his ability and willingness to delegate responsibility to subordinate commanders.

Having been tasked to organize and launch an attack south of the Ardennes, Patton made it his business to not only examine the specific defenses and forces arrayed directly in front of him, but also to examine those that would be on his flanks if his assault were successful. For example, he sought and received permission during November to

¹⁷ Delaforce, 305.

¹⁸ Elstob, 361.

“employ reconnaissance aircraft deep into the forested Eifel region” where the German buildup was taking place.¹⁹ While air officers considered these to be a low priority, he received enough pictures to see the buildup in the area.²⁰ On November 24, Patton noted in his diary that “the First Army is making a terrible mistake in leaving VII Corps static as it is highly probable that the Germans are building up east of them.”²¹

As noted above, when the German offensive began on the 16th, Patton argued briefly against giving up forces from his upcoming offensive, but when directed by Bradley and Eisenhower, he promptly pivoted his 10th Armored Division and sent it to support VII Corps. Keegan notes that they entered the battle promptly on the 17th against the Seventh German Army in the south.²²

On December 18, Bradley summoned Patton to his headquarters in Luxembourg where they discussed the possibility of a major counter-attack by Patton’s Third Army into the southern flank of the salient²³ created by the German offensive.²⁴ By the 18th, Patton’s forces received orders to change its front to the north. Movement began before midnight.²⁵ Patton called a staff meeting for early the next morning, December 19, where he reviewed three ideas for a counter-offensive. These were:

- If the German Fifth Panzer Army continued to advance and either captured or by-passed Bastogne, then Patton would move northwest of the current fighting to throw a screen across the crucial Meuse River crossings;
- If the German effort continued to stall, then Patton would move directly north to relieve Bastogne, and then turn to retake St. Vith; or
- If SHAEF [Eisenhower] approved, then Patton would attack directly toward St. Vith to cut off and trap most of the German attacking forces.

Patton arranged a simple telephone code with his Chief of Staff to activate these options, and then departed for a major command conference at Eisenhower’s headquarters.

Patton “stunned”²⁶ the commanders’ conference by asserting that he could put three divisions into a counter-attack in less than 72 hours. Eisenhower agreed, but set the start date back one day to the 22nd and counseled Patton that he needed to ensure that he attacked with three full divisions on that date. This maneuver (changing the front of his Army, handing off defensive positions to new forces so the Allied front remained intact, and preparing for an attack in an entirely different direction) was extremely difficult,

¹⁹ D’Este. *Patton: A Genius for War*, 676.

²⁰ Delaforce, 72.

²¹ Delaforce, 73.

²² Blumenson. *Patton*, 246.

²³ Salient: an outward bulge in a military line projecting into enemy territory, flanked by enemy forces.

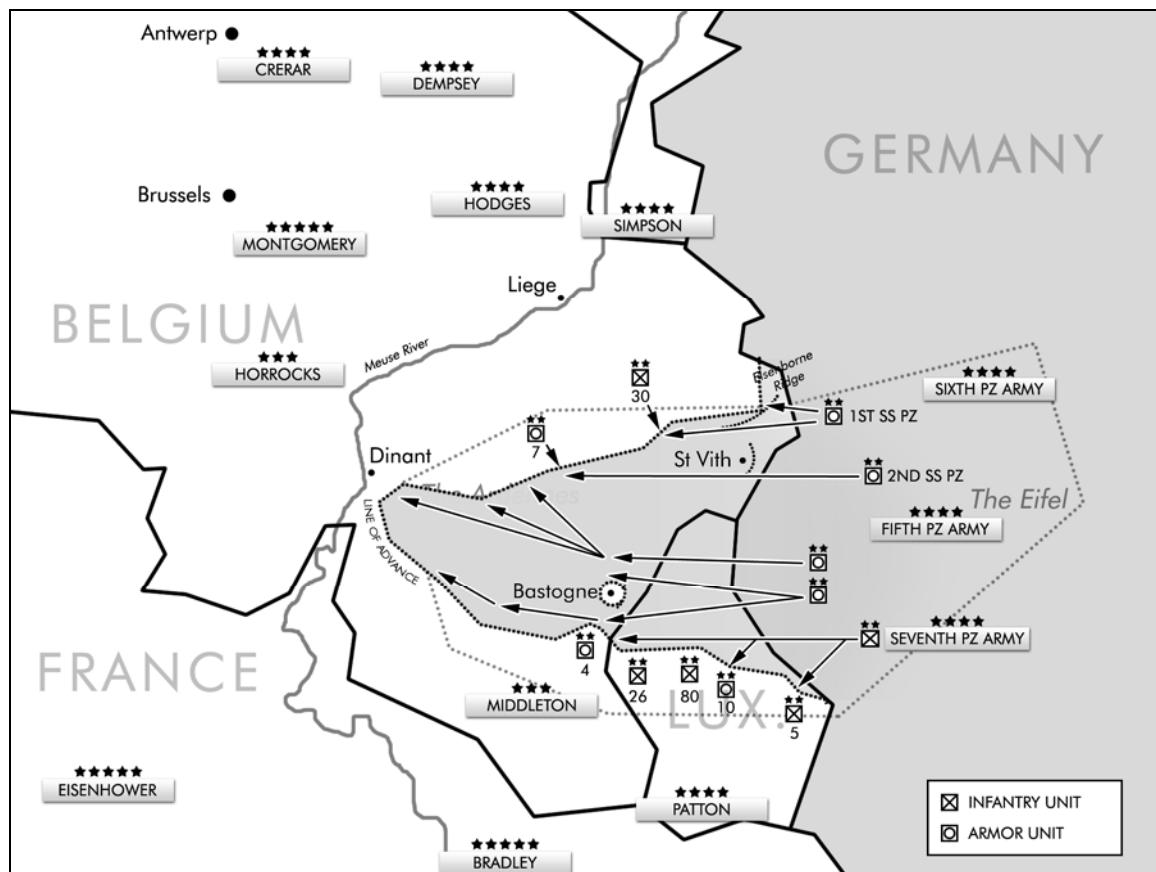
²⁴ Blumenson, 246.

²⁵ Delaforce, 237.

²⁶ Delaforce, 160.

particularly with the capabilities provided by the command and control systems of World War II.

The commanders decided to execute Bradley's second option: attacking to relieve Bastogne.²⁷ Three divisions (4th Armor, 80th Infantry, and 26th Infantry) crossed their lines of departure at 0600 on the 22nd and, despite terrible weather, extremely difficult terrain, and determined resistance by German forces, battled their way through to Bastogne.²⁸ The three original divisions were soon supported by the 10th Armor and the 5th Infantry.²⁹ The lead elements of Patton's Third Army reached the town on December 26, and by the next day they had opened a road to resupply Bastogne.³⁰



Map 4. The German advance on December 25, which was pierced by Patton's counter-attack from the south.

Having achieved the goal of penetrating the German salient and relieving the surrounded forces, Patton was eager to continue his counter-offensive. Eisenhower had reconstituted his own (SHAEF's) reserve with the 87th Infantry and the 11th Armor. He released these

²⁷ Blumenson, 250.

²⁸ Blumenson, 250.

²⁹ Delaforce, 246.

³⁰ Blumenson, 251.

to Bradley's 12th Army Group on December 27 and Bradley immediately assigned them to Patton, with the proviso that he employ them on his left (the west, which was the direction from which they would approach his command, but also in order to prevent Patton from deciding to employ them in an attack to the east, across the Rhine).³¹ These fresh forces were moved immediately into offensive positions and went onto the attack on December 30. These attacks ultimately linked them up with British and American forces from the north on January 11 and recaptured all of the territory lost to the German offensive by January 28.³²

Meanwhile, General Montgomery also demonstrated both his very different philosophy of war and his considerable skill as a commander. His approach was quite different from Patton's, emphasizing thorough preparation and risk minimization. His initial command was the 21st Army Group, consisting of the British First and Canadian Second Armies. They were located well north of the Ardennes, with the U.S. 1st and 9th Armies (part of Bradley's 12th Army Group) between them and the German offensive. At the same time, Montgomery's forces were a primary objective of the German plan, which foresaw cutting the Allies in half, capturing the port of Antwerp, cutting the 21st Army Group off from its supplies, and ultimately surrounding and destroying that force. As the actual attack developed, Montgomery, whose approach stressed unity of command, asked for command of all Allied forces north of the salient, including the U.S. 1st and 9th Armies.

After the SHAEF command conference on December 19, Eisenhower gave command of the forces south of the salient to Bradley and those north of the salient to Montgomery. This decision was not received positively by American commanders, but they understood the need to simplify and clarify command relationships and accepted the decision. On December 19, Montgomery believed that there was little to prevent the Germans from "bouncing the Meuse and advancing on Brussels."³³ He promptly moved four divisions to block the approaches to Antwerp and dispatched British reconnaissance troops to examine and report on the state of defenses at the Meuse river bridges.³⁴

³¹ Elstob, 354-355.

³² Elstob, 351.

³³ Delaforce, 159.

³⁴ Elstob, 216.

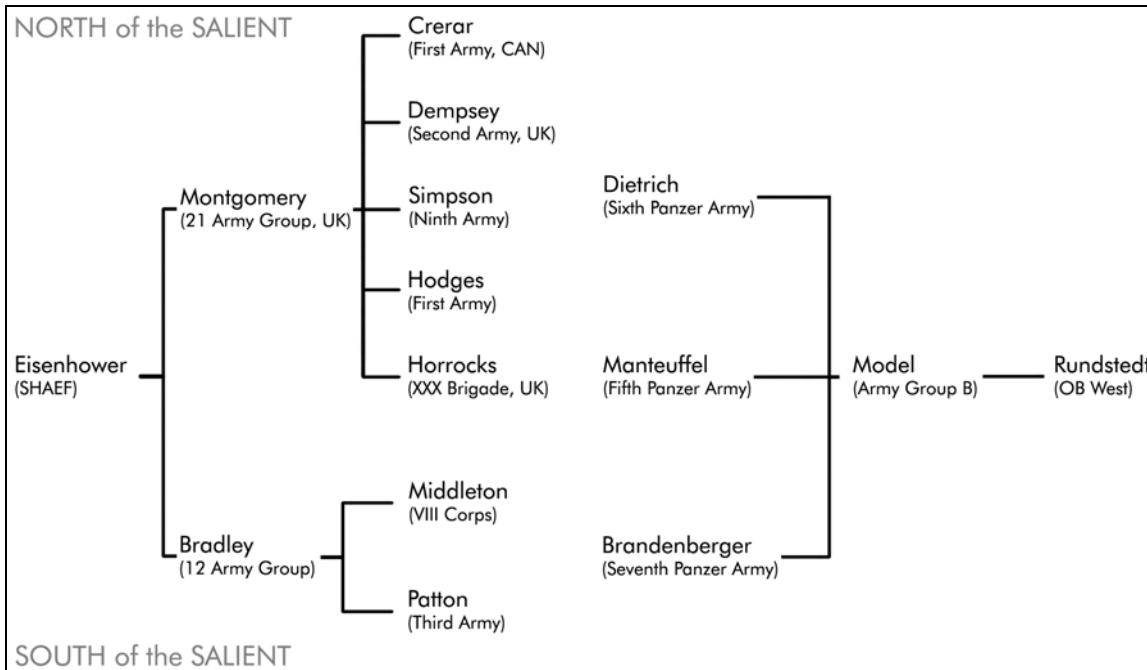


Figure 2. Command arrangements after December 19.

Montgomery went out of his way to visit the American generals coming under his command (Simpson of the Ninth Army and Hodges of the First Army) to discuss the situation with them. He also asked them to nominate their most aggressive American Corps commander (MG Collins) to organize a counter-attack that would blunt the nose of the German advance, which was then threatening to reach and cross the Meuse River.³⁵ In keeping with his conservative approach, on December 20 Montgomery ordered General Horrocks' British XXX Corps to act as "longstop" by guarding the Meuse River bridges, with the 29th Armored Brigade moving into those positions on December 21.³⁶

The German advance in the center, led by the Fifth Panzer Army, continued almost due west and approached the Meuse River at Dinant. However, these forces were strung out along the road and had been forced to take indirect routes against defenses that depleted their ammunition and, more importantly, reduced the fuel available to them. Moreover, the improved weather, beginning on December 23, enabled Allied air to disrupt the attack and forced the Germans to remain under cover during daylight hours.³⁷ The British 29th Armored Brigade engaged the lead German elements (part of the 2nd SS Panzer Division from the German Fifth Panzer Army) just east of Dinant, one of the key Meuse crossing points.³⁸ This ultimately proved to be the deepest German penetration of the campaign. On this same date, Montgomery approved moving the defenders back from St. Vith, thus straightening his lines and bringing more than 15,000 men, about 100 tanks, and 9

³⁵ Elstob, 273.

³⁶ Delaforce, 278 and Elstob, 270-271.

³⁷ Delaforce, 228.

³⁸ Elstob, 317-8.

battalions of field artillery back to bolster the defensive line.³⁹ The unexpected and spirited defense of St. Vith had prevented the Fifth Panzer Army from bringing most of its forces into the attack effectively, but its value was not, in Montgomery's judgment, worth the continuing risk that it might be cut off or overrun as the Germans became increasingly desperate to break through.

Moreover, "Montgomery had become convinced that the Germans were about to make their greatest effort and decided to postpone the attack...against the German point and, instead, to create a firm shoulder to block their advance to the north or northwest."⁴⁰ However, MG Harmon, commander of the 2nd U.S. Infantry Division, noted that the 2nd SS Panzer Division was inactive in front of him and received permission to conduct reconnaissance in force on December 24. This he converted into a set of coordinated enveloping movements that, between December 25 and 27, encountered elements of the 2nd SS Panzer Division piecemeal (largely because it was very low on fuel) and effectively destroyed it.⁴¹ When this success unfolded, Montgomery ordered Horrocks' XXX Corps to cross the Meuse at two important bridges: Dinant and Chanley.

Despite this success, Montgomery's cautious approach did not change. When General Bradley went to his headquarters on December 25 and urged launching coordinated attacks from both sides of the bulge, he demurred, arguing that the Germans should be allowed to make one more attack to further deplete their forces and that the American forces under his command had suffered heavy losses. He preferred straightening his lines.⁴² Montgomery sent word to Eisenhower at SHAEF on December 27 that his counter-attack would be ready on January 3.⁴³ This was, of course, several days after Patton's attack. Montgomery did make his attack on schedule. Under pressure from both the north and the south, the commander of the Fifth Panzer Army, Manteuffel, recognizing that he could not defeat both attacks, ordered his forces to "fall back by fighting delaying actions."⁴⁴ By January 8, even Hitler recognized that the battle was lost and authorized the withdrawal of all German units.

For his part, Eisenhower showed considerable diplomatic skill, a willingness to take risks when necessary, and the ability to make timely decisions. His decision on the first day of the attack to send two armor divisions into the battle without delay was both important and effective. The decision to release his original SHAEF reserve, the 82nd and 101st Airborne Divisions, on December 17 also proved timely and made a difference at both St. Vith and Bastogne. The decision to consolidate command north and south of the bulge in Bradley and Montgomery was a diplomatic and operational triumph, although it produced lengthy debate after the battle and was certainly not welcomed by the senior Americans who found themselves under British command. However, Eisenhower was able to take advantage of Bradley's willingness to use Patton's aggressiveness to promptly seize the

³⁹ Elstob, 295.

⁴⁰ Elstob, 322.

⁴¹ Delaforce, 259.

⁴² Elstob, 339.

⁴³ Elstob, 354.

⁴⁴ Delaforce, 301.

initiative (as well as his capability to control Patton, ensuring for example, that he did not undertake attacks outside the guidance from SHAEF) and Montgomery's deliberate and cautious approach to create strong defenses in depth that ultimately exhausted the German fighting power. Moreover, the release of the recreated SHAEF reserve (11th Armor and 87th Infantry) to Patton through Bradley provided the fresh troops needed for Patton to renew his attack and continue the pressure on the salient from the south while Montgomery completed preparations for his attack from the north.

Ultimately, the Battle of the Bulge was decided by the same strategic factors that decided World War II. Germany lost because of attrition. As the end of the war neared, the Allies had far more people and materiel than the Germans. These factors showed themselves at the operational level. The Germans had inadequate numbers of tanks, artillery, aircraft, and skilled personnel. They were unable to supply their fast moving armor, to provide effective air cover, or to provide artillery to support their infantry. The Allied air forces proved to be a major advantage. At the tactical level, however, the major surprise of this battle was the toughness and resilience of the American troops. Infantry (regular and airborne), artillery, armor, engineers, and combat support personnel fought with valor and determination far beyond what the Germans expected.

Dots That Were Not Connected

As the earlier discussion makes clear, decisionmaking at the operational level by the Allies passed the most important test of command: it worked. The German forces had some initial successes, but were ultimately defeated and major components of Germany's remaining combat power were destroyed. However, a primary reason for the initial German successes was the total surprise with which the German offensive was launched.

Review of historical discussions of the Battle of the Bulge shows that, like most major military surprises, the Allies had intelligence that, in hindsight, should have (or at least could have) given them warning. Those elements of intelligence included:

- September 4: ULTRA intercepted a message reporting Hitler's briefing to a senior Japanese official that he was "forming a force of a million men, augmented by units pulled back from other fronts, and a replenished air force that would strike a large-scale offensive in the west—probably in November.⁴⁵
- September 25: ULTRA decoded an intercepted message from September 18 stating that all SS units on the Western Front must be withdrawn and assigned to a new Sixth Panzer Army.⁴⁶
- Early November: ULTRA broke the codes of the German rail network and picked up signals identifying over 400 trains moving men and materiel toward the Ardennes front.⁴⁷

⁴⁵ Delaforce, 70.

⁴⁶ Delaforce, 71.

- Early November: SHAEF's Chief of Intelligence, MG Strong, mentioned the existence of the new Sixth Panzer Army and that the Fifth Panzer Army had disappeared from the line in Lorraine.⁴⁸
- November 18 and 19: In clear weather, pilots from both IX and XIX Air Commands reported heavy rail movements in the Eifel.⁴⁹
- November 23: ULTRA intercepts indicated that German air forces were being moved west and ordered to protect large troop movements into the Eifel.⁵⁰
- December 7: Patton and his G-2 (Colonel Koch) remarked on the fact that the Germans had failed to follow their doctrine and standard practice of counter-attacking against Third Army operations in the Saar region, despite the fact that there were reportedly German forces available in the region.⁵¹
- December 7: ULTRA reported that German Army Group B (which included all of the forces in the west) wanted fighter cover for the entire Eifel area and was asking for aerial reconnaissance of the crossings over the Meuse River.⁵²
- December 12: ULTRA noted that all SS units were observing radio silence. (This was a standard practice when a major operation was in its final preparation phases. After the war, a senior ULTRA officer who was on leave during this period suggested this was a very important indicator.)⁵³
- December 14 and 15: The American 28th Division reported the sounds of large numbers of iron rimmed wheels of horse drawn vehicles and the deep throbbing of engines in low gear during the night.⁵⁴
- December 15: An intelligence officer of the 106th Infantry reported the sound of major enemy movements in their sector.⁵⁵
- December 15: A Pole from the 18th Volksgrenadiers was captured by a patrol from the 106th Infantry and reported that he was glad to be out of the war because a large-scale offensive was about to start.⁵⁶

Obviously, the key long-term indicators that should have enabled Allied intelligence were largely from ULTRA, the extremely sensitive code-breaking operation. That intelligence

⁴⁷ Delaforce, 71.

⁴⁸ Delaforce, 72.

⁴⁹ Delaforce, 72.

⁵⁰ Delaforce, 72.

⁵¹ Zaloga, 14.

⁵² Delaforce, 73.

⁵³ Delaforce, 74.

⁵⁴ Elstob, 93.

⁵⁵ Elstob, 121.

⁵⁶ Elstob, 127.

was tightly controlled for fear that the Germans would realize that the Enigma system on which their codes were based had been broken. That would have led them to, at a minimum, change the system, denying the Allies valuable intelligence. At worst, the Germans might have used the compromised system to send false messages and deceive the Allies. Hence, it was necessary not only to control the flow of intelligence from ULTRA, but also to ensure that actions taken based on it would not compromise the code breaking success. In the most famous case, Churchill made the decision not to warn the British city of Coventry when German air raids were planned against it, resulting in many civilian casualties that might have been avoided, although Keegan suggests that this is a misinterpretation and that Churchill simply lacked the time to respond to the threat and would have protected the city if he had been able.⁵⁷ A similar example is found in Operation Barbarossa when the Allies warned Russia of the impending German attack but chose not to validate the warning by revealing the ULTRA intelligence, thus failing to convince the Russians and leaving them unprepared and vulnerable.⁵⁸

A great deal of ULTRA material was strategic, but ample provision had been made to deliver it to operational commanders. This was done through a handpicked set of Special Liaison Officers who reported directly to Group Captain Winterbotham at Bletchley Park. Twenty-eight of these officers were placed at British and American command centers, including SHAEF (Eisenhower), 12th Army Group (Bradley), 21st Army Group (Montgomery), and the First (Hodges) and Third (Bradley) Armies. Hence, all of the senior commanders involved in this case study had access to the ULTRA intercepts mentioned above. This information was also available to their senior intelligence officers (G-2), who were typically responsible for reviewing it and offering relevant material to their commanders.⁵⁹

While ULTRA material was distributed to the most relevant commands, it was also not generally discussed between headquarters, nor could it be shared with most of the intelligence staff at any command center. It was so sensitive that it was often handled only in hard copy moved from place to place by courier. In addition, the Special Liaison Officers were tasked to help the commands protect the secret of ULTRA's existence, which meant that they, the G-2s, and the commanding officers were very careful only to take action based on it that could be understood by the Germans as having originated in routine practices or from "normal" intelligence. Delaforce, the author who had the advantage of having studied the ULTRA material and its use before writing his work on the Battle of the Bulge, also notes that there was a low level of trust among some of the G-2 officers in the key headquarters.⁶⁰ Finally, while commanders frequently visited one another, intelligence staffs from different commands usually stayed at their headquarters, seldom gathering for discussions.

However, as noted earlier, these difficulties did not prevent all of the Allies from foreseeing the attack. The strongest statement from a senior commander was Patton's

⁵⁷ Keegan, 500.

⁵⁸ Keegan, 500-1.

⁵⁹ Delaforce, 69.

⁶⁰ Delaforce, 69.

conclusion that the Germans were preparing a strong spoiling attack to prevent, delay, or disrupt the major offensives being planned by his command and Montgomery's. Patton's G-2 (Colonel Koch) briefed him on December 7 that the Germans were building up a force opposite the First Army in the Ardennes. He repeated this conclusion at a staff briefing on December 9.⁶¹ Patton passed this assessment on to the SHAEF G-2 section under MG Strong. However, when Strong raised the issue with Bradley's 12th Army Group (which included the First Army), he received the response that (a) an offensive in the winter in the Ardennes would be foolhardy, and (b) the force was not designed for a pre-emptive attack, but rather for a reactive counter-strike in the event of an Allied breakthrough toward the Rhine in early 1945.⁶²

Even at the last minute, some intelligence officers saw the patterns emerging. Colonel Dickson, G-2 at First Army, told General Hodges and his staff on December 14 that "many German POWs were saying that an offensive would soon begin." He reportedly slapped his situation map in the correct area and said, "It's the Ardennes." According to Delaforce, "Nobody paid him much attention."⁶³ Finally, Colonel Koch (Patton's G-2) stated on the same date that "the enemy rail movements indicate a definite build-up of enemy forces and supplies opposite the north flank of the Third Army. The massive armored forces give the enemy the definite capability to launch a spoiling offensive."⁶⁴

What Could Have Been

We can conclude that had greater information sharing occurred, it is likely that the size, objectives, and timing of the German offensive might well have been understood. For example, German efforts to reconnoiter the bridges over the Meuse and their defenses indicated preparations for some type of action deep into the First Army's territory. Also, sharing intelligence across echelons would have placed the short-term tactical indicators arising within the 106th and 28th Infantry Divisions on December 14 and 15 (sounds of forces moving into position and prisoner of war reports of an imminent offensive) in the hands of those at the First Army and 12th Army Group who were aware of the large German build-up in the Eifel opposite them in the Ardennes.

Even greater results could have been expected if the G-2 (Intelligence) sections at the Third Army, First Army, SHAEF, and 12th Army Group had been able to collaborate. Colonel Dixon at the First Army and Colonel Koch at the Third Army, both of whom saw the possibility of a major attack through the Ardennes, could not talk directly to one another, but rather were forced to channel their conclusions and the supporting evidence up through the chain of command through Bradley's disbelieving staff at the 12th Army Group. While Patton (Third Army) listened to and believed his G-2, he was not responsible for the sector defending the Ardennes. Hodges (First Army) and his other staff, who did have that responsibility, did not believe their own G-2 (Dickson). Eisenhower's G-2 could raise issues with the First Army G-2, but would not (and

⁶¹ Blumenson, 245.

⁶² Zaloga, 14.

⁶³ Delaforce, 74.

⁶⁴ Delaforce, 74.

probably could not in the absence of overwhelming evidence) force the First Army G-2 to change his conclusions. Serious collaboration would have allowed richer dialogue and might well have resulted in the type of increased intelligence collection needed to resolve the issue correctly. That would certainly have included greater efforts at aerial reconnaissance when the weather permitted, as well as the kind of aggressive patrolling and reconnaissance in force that Patton noted were lacking in the First Army's front.

Assuming that greater information sharing and collaboration about the available intelligence had led to the conclusion that the Germans were assembling a major force for a new offensive through the Ardennes, or even raised that as a very real possibility in the minds of the operational level commanders, the Allies would almost certainly have made a number of different decisions. For example:

- Greater emphasis would have been placed on gathering intelligence about the forces gathering in the Eifel.
- The Ardennes defenses would not have depended on a combination of green troops and forces withdrawn from the line for resupply, equipment refitting, and personnel reinforcements.
- Allied air forces would have made serious efforts to strike at the large numbers of rail supply and troop convoys moving into the Eifel in November and December.
- The First Army would have carried out serious patrolling and reconnaissance in force on the ground, increasing their awareness of the adversary in their sector.
- While Montgomery and Patton might well have been tasked to prepare major attacks across the Rhine, their timing and composition would have been altered to ensure that the Ardennes sector was properly defended.
- Finally, the defenses in the Ardennes would have been much stronger and more coherent.

Had these steps (which are hardly radical) been taken, it is almost certain that the Germans would not have been ready to launch the attack when they did and distinctly possible that they could not have amassed the forces they did within the sector. While Hitler would have been unlikely to call off the attack, its success (and Allied casualties and confusion) would have been greatly reduced if the element of surprise had been lost. Moreover, this discussion focuses primarily on information distribution and a subset of the patterns of interaction that were embedded and allowed within the Allied coalition late in World War II. Considerably more might have been expected had the distribution of decision rights been different.

Sources

Blumenson, Martin. 1985. *Patton: The man behind the legend, 1885-1945*. New York: William Morrow and Company, Inc.

D'Este, Carlo. 1995. *Patton: A Genius for War*. New York: HarperCollins.

DeLaForce, Patrick. 2004. *The Battle of the Bulge: Hitler's final gamble*. Harlow: Pearson Education Limited.

Elstob, Peter. 2003. *Hitler's last offensive*. Barnsley: Pen & Sword Books Limited.

Keegan, John. 1989. *The Second World War*. New York and Toronto: Penguin Books.

Zaloga, Steven J. 2004. *Battle of the Bulge 1944*. Oxford: Osprey Publishing.

Battle of the Bulge: The Impact of Information Age Command and Control on Conflict

Richard E. Hayes, Ph.D.

Kristi Sugarman

22 June 2006

2006 CCRTS

Coronado, CA

Battle of the Bulge

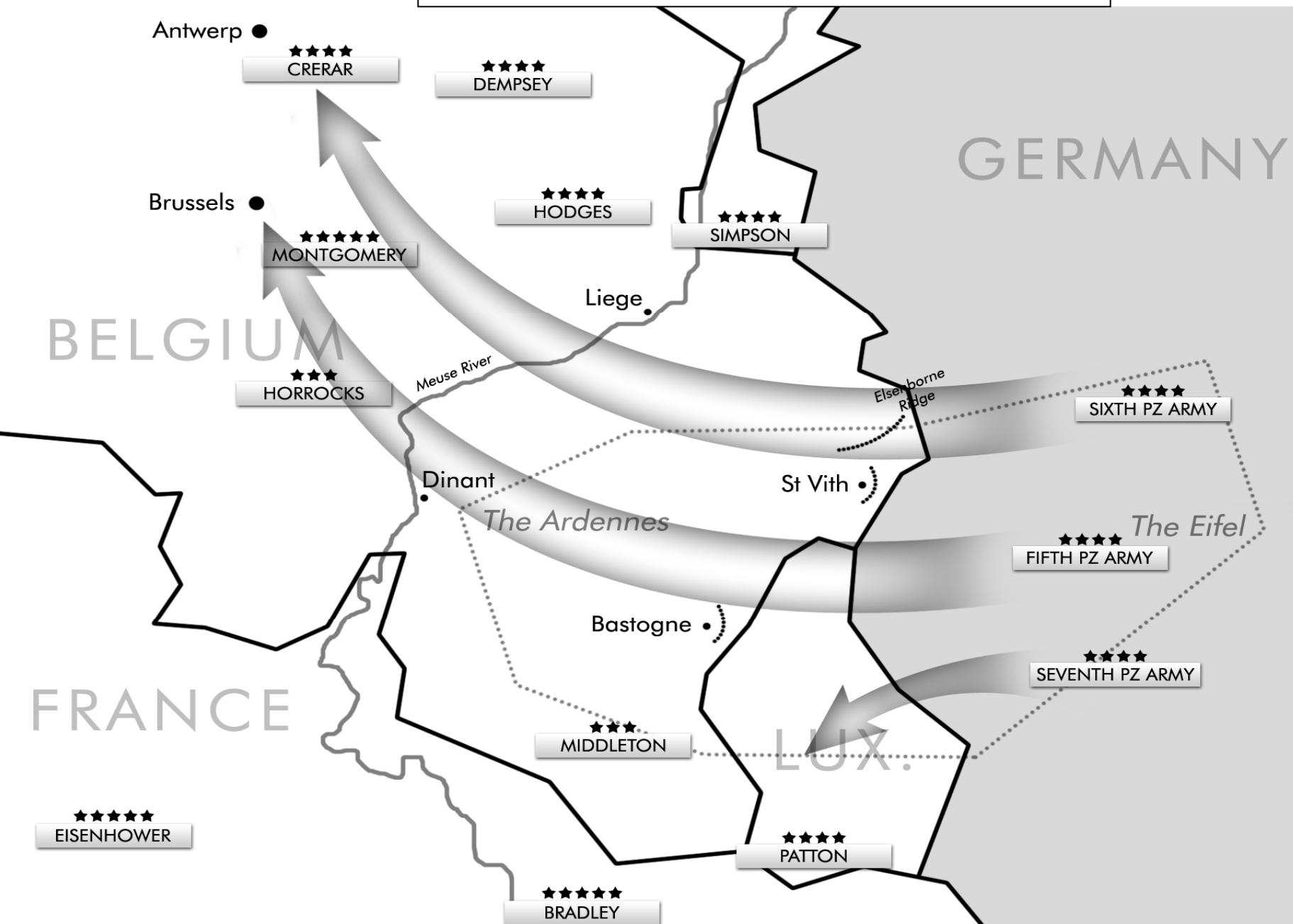
The decisions made by the allies illustrate:

- effective Industrial Age decisionmaking
- situations where the adoption of network-centric and Edge decisionmaking would have made a difference

The decisions made by the Germans:

- were dominated by Hitler insisting the entire plan be followed down to its last detail
- were closely followed by senior German generals out of fear or loyalty

The German Plan



The Order of Battle

GEN HODGES

FIRST U.S. ARMY

ARMY GROUP B

GEN MODEL

Gerow
(V Corps)

99 Inf Div

Middleton
(VIII Corps)

18 Cav Sqn
14 Cav Gp
32 Cav Sqn
422 Inf Reg
423 Inf Reg
424 Inf Reg
106 Inf Div
112 Inf Reg
110 Inf Reg
28 Inf Div
109 Inf Reg
9 Arm Div
60 Arm Inf Bn
4 Inf Div
12 Inf Reg

326 Vg Div
12 SS Panzer Div
2 SS Panzer Div
277 Vg Div
9 SS Panzer Div
1 SS Panzer Div
Skorzeny Commandos
von der Heydte's Para Gp
12 Vg Div
3 Para Div
18 Vg Div
Fuehrer Belgeit Br
62 Vg Div
116 Panzer Div
560 Vg Div
2 Panzer Div
Panzer Lehr Div
26 Vg Div
5 Para Div
352 Vg Div
276 Vg Div
212 Vg Div

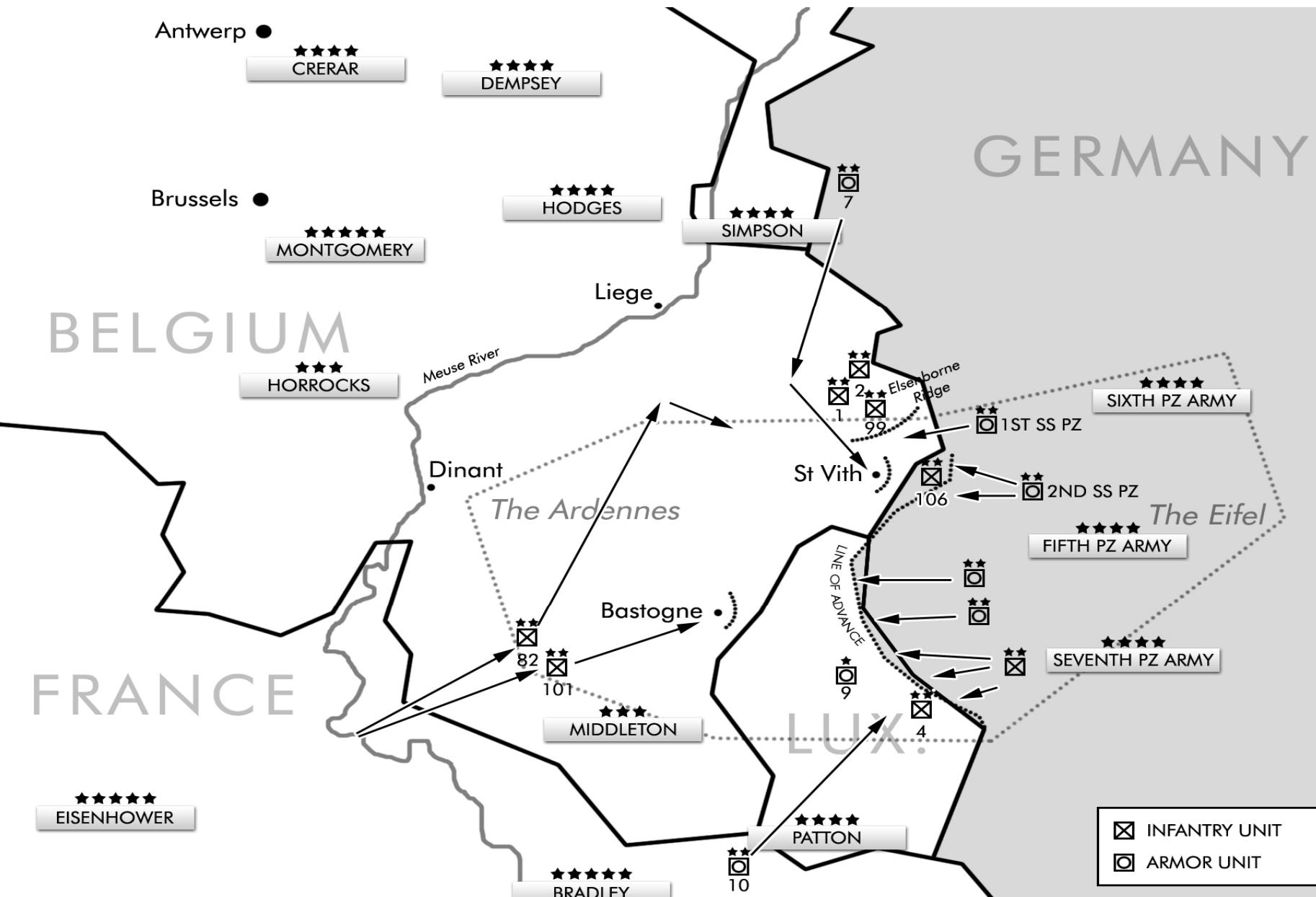
Dietrich
(Sixth Panzer Army)

Manteuffel
(Fifth Panzer Army)

Brandenberger
(Seventh Panzer Army)

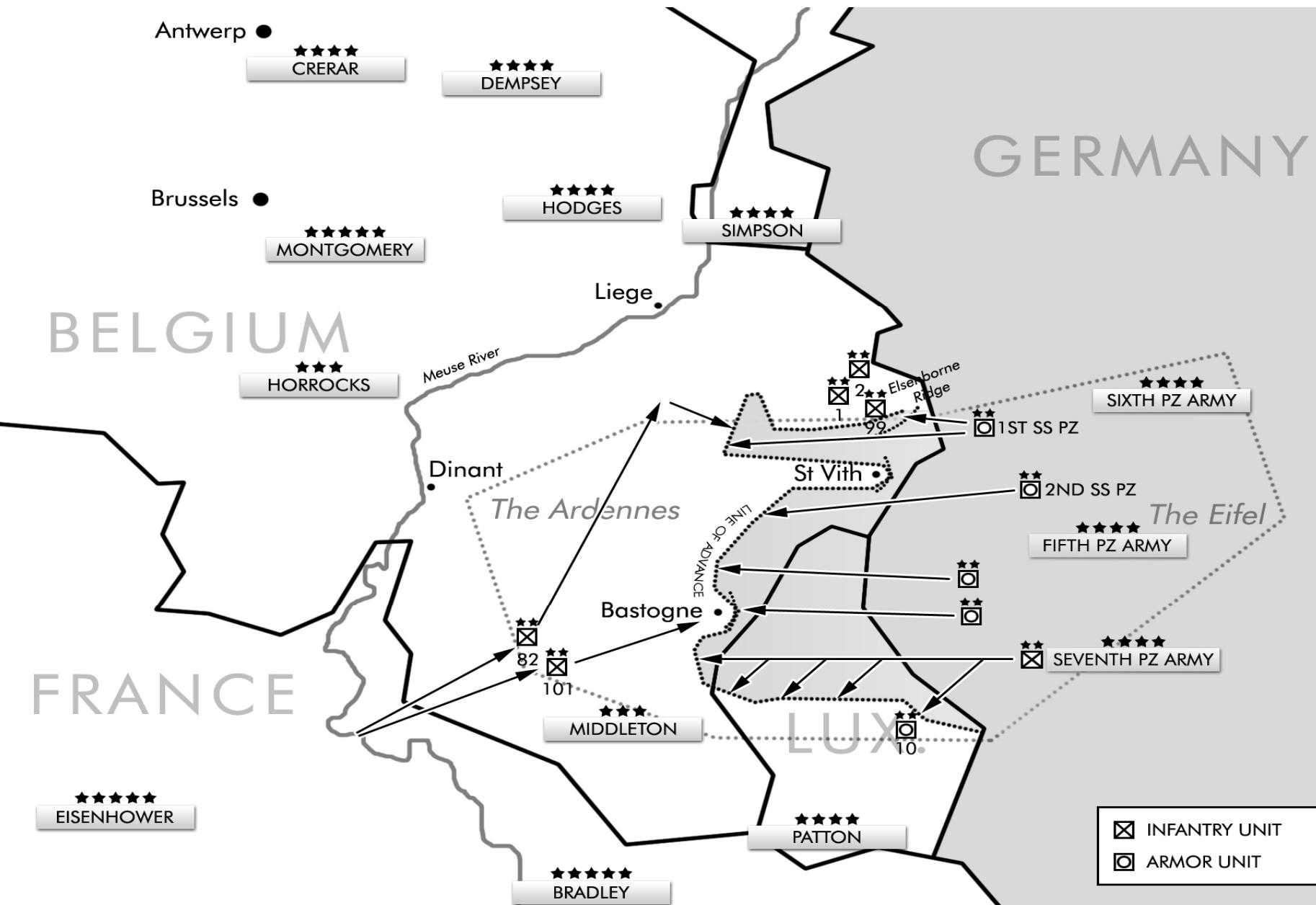
The German Advance

December 16



The German Advance

December 20

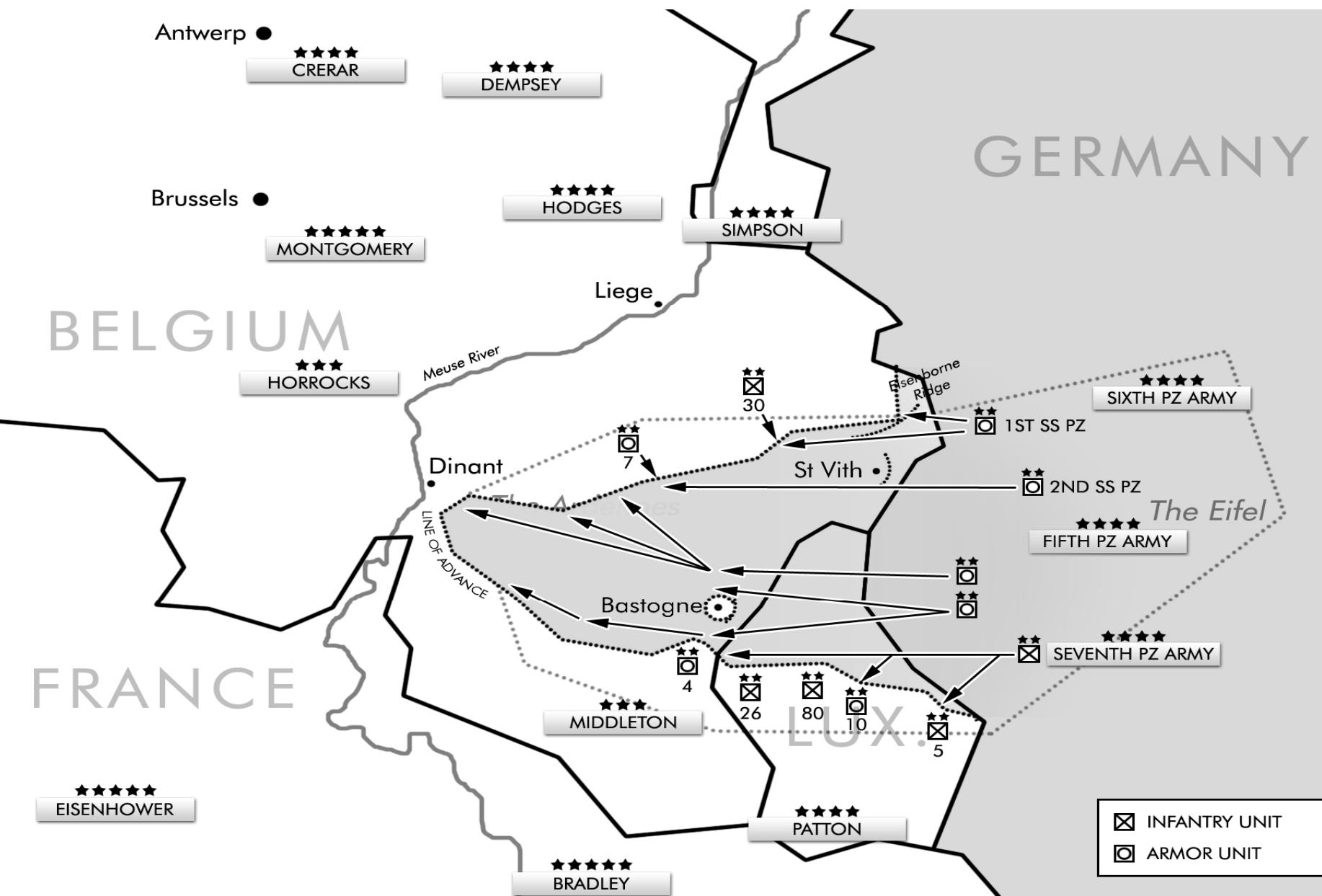


Three Allied Options

- If the German Fifth Panzer Army continued to advance and either captured or by-passed Bastogne, then Patton would move northwest of the current fighting to throw a screen across the crucial Meuse River crossings;
- If the German effort continued to stall, then Patton would move directly north to relieve Bastogne, and then turn to retake St. Vith; or
- If SHAEF [Eisenhower] approved, then Patton would attack directly toward St. Vith to cut off and trap most of the German attacking forces.

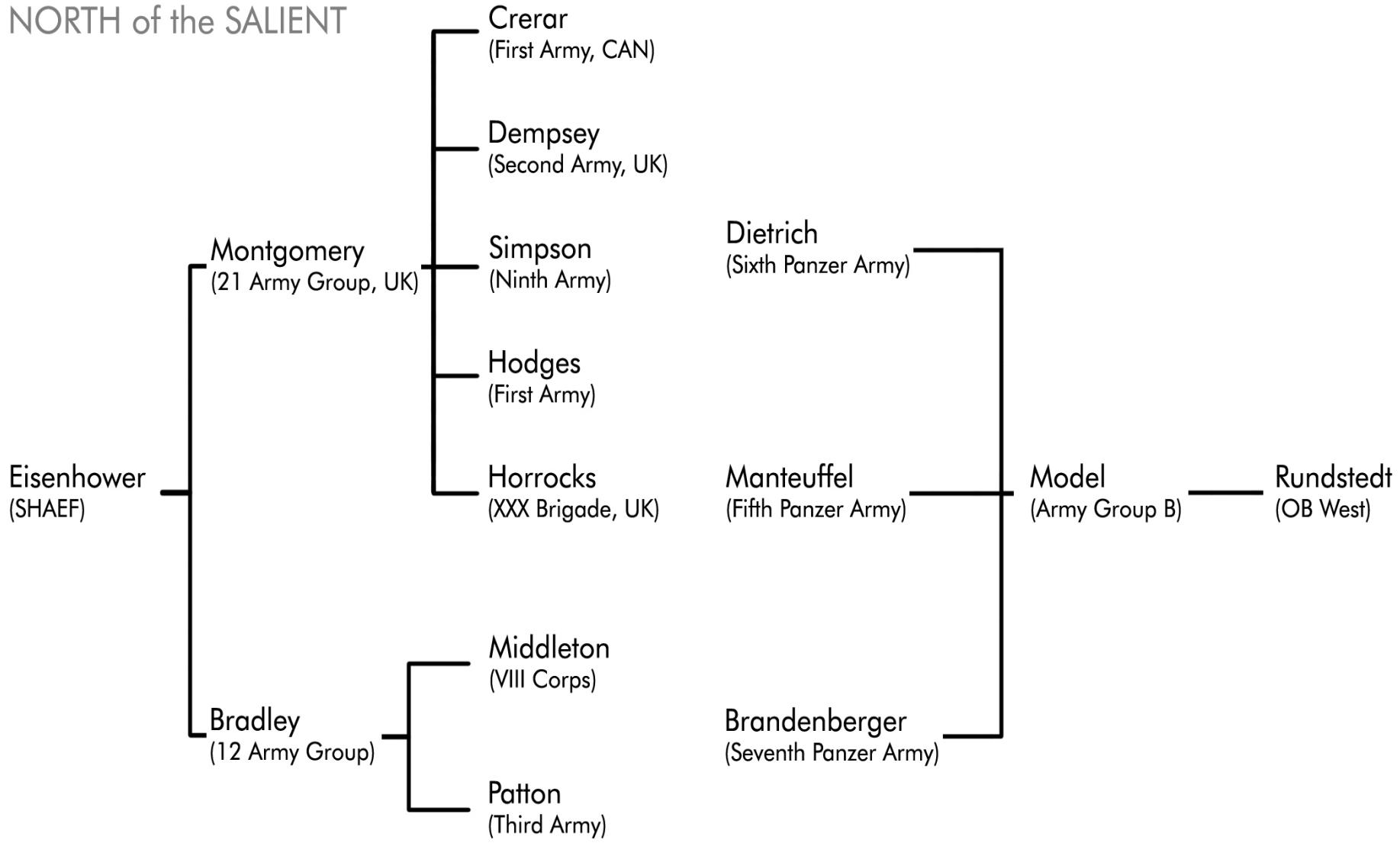
The German Advance

December 25



Command Arrangement After December 19

NORTH of the SALIENT



SOUTH of the SALIENT

General Bradley (Patton)

- Made the decision to commit
- Most aggressive commander
- Focused on Bastone rather than St. Vith
- Sent in reserves from SHAEF and then releases them to Patton, positioned to keep them away from Germany

General Montgomery

- Very cautious commander
 - He positions long stops to protect Brussels and Antwerp
 - Sends armor to Dinant
- If Germans were to break through flanks, they would have run into him
- Asks for control of US forces north of the Bulge
- Slow at launching attacks—built up combat power before using it

General Eisenhower

- Responded promptly
 - Dispatched 7th Armor and 10th Armor
 - Committed SHAEF reserve (82nd and 101st Airborne)
- Reconstitutes reserves
 - 87th Infantry and 11th Armor
- Reorganizes command to correct problem and puts a US & UK senior commander on both sides of the Bulge
- Great diplomatic skills

Dots not connected

- The Allies received the following intelligence :
 - Sept. 4: ULTRA intercepts message of the formation of a million men set to strike in the west in November
 - Sept. 25: ULTRA decodes a message that all SS units on the Western Front must be withdrawn and assigned to a new Sixth Panzer Army.
 - Early November: ULTRA broke the German rail network codes—400 trains moving men and materiel toward the Ardennes front
 - Early November: SHAEF's Chief of Intelligence mentions the existence of the new Sixth Panzer Army, Fifth Panzer Army disappeared from the line in Lorraine
 - Nov. 18-19: Pilots from IX and XIX Air Commands report heavy rail movements in the Eifel.
 - Nov. 23: ULTRA intercepts indicate German air forces being moved west to protect large troop movements into the Eifel

Continued

- Dec. 7: Patton remarks the Germans failed to follow doctrine and standard counter-attacking against Third Army operations in the Saar region
- Dec. 7: ULTRA reported German Army Group B wanted fighter cover for the Eifel area and aerial reconnaissance of the crossings over the Meuse River
- Dec 12: ULTRA noted all SS units were observing radio silence.
- Dec. 14-15: The American 28th Division reports the sound of large numbers of iron rimmed wheels of horse drawn vehicles and engines in low gear during the night
- Dec. 15: An 106th Infantry intelligence officer reports the sound of major enemy movements
- Dec. 15: A Pole was captured by the 106th Infantry and reported that he was glad to be out of the war because a large-scale offensive was about to start.

Information Sharing & Collaboration

- ULTRA material was distributed to relevant commands but was not discussed between headquarters, nor could it be shared with other staff at any command center
- Collaboration episodic and required face to face meetings

Consequences of Improved Information Sharing & Collaboration

- Greater emphasis would have been placed on gathering intelligence about the forces gathering in the Eifel.
- The Ardennes defenses would not have depended on a combination of green troops and forces withdrawn from the line for resupply, equipment refitting, and personnel reinforcements.
- Allied air forces would have made serious efforts to strike at the large numbers of rail supply and troop convoys moving into the Eifel in November and December.

Continued

- The First Army would have carried out serious patrolling and reconnaissance in force on the ground, increasing their awareness of the adversary in their sector.
- While Montgomery and Patton might well have been tasked to prepare major attacks across the Rhine, their timing and composition would have been altered to ensure that the Ardennes sector was properly defended.
- In essence, the defenses in the Ardennes would have been much stronger and more coherent.